What is claimed is:

1. A device for delivering fluid to a patient, comprising:

an exit port assembly;

a reservoir including an outlet connected to the exit port assembly, and a side wall extending along a longitudinal axis towards the outlet; and

a plunger assembly received in the reservoir and movable along the longitudinal axis of the reservoir towards the outlet of the reservoir, the plunger assembly including,

a first lateral segment extending laterally with respect to the longitudinal axis of the reservoir and contacting the side wall of the reservoir,

a second lateral segment positioned between the first lateral segment and the outlet of the reservoir, the second lateral segment extending laterally with respect to the longitudinal axis of the reservoir and contacting the side wall of the reservoir, and longitudinally spaced from the first lateral segment, and

a shape memory element having a changeable length decreasing from an uncharged length to a charged length when at least one charge is applied to the shape memory element, connecting the first and the second lateral segments, and comprising two-way shape memory material.

2. A device according to Claim 1, wherein the shape memory element is elongated and extends between a first end connected to the first lateral segment and a second end connected to the second lateral segment.

3. A device according to Claim 2, wherein the shape memory element comprises a wire having a generally circular cross-section.

4. A device according to Claim 1, wherein the first and the second lateral segments include outer circumferential rings shaped and oriented to engage the side wall of the reservoir and substantially prevent movement of the first and the second lateral segments away from the outlet of the reservoir.

5. A device according to Claim 1, wherein the shape memory element is made of a nickel and titanium alloy.

6. A device according to claim 1, wherein the plunger assembly further includes a rigid projection positioned between the first and the second lateral segments and extending parallel with the longitudinal axis of the reservoir for limiting the closeness of the first and the second lateral segments.

7. A device according to claim 6, wherein the rigid projection of the plunger assembly has a substantially predetermined length extending parallel with the longitudinal axis of the reservoir.

8. A device according to claim 7, wherein the shape memory element has a substantially predetermined uncharged length.

9. A device according to claim 1, wherein the shape memory element has a substantially predetermined uncharged length and a substantially predetermine charged length.

10. A device according to Claim 1, wherein the plunger assembly is prevented from rotating with respect to the side wall of the reservoir.

11. A device according to Claim 10, wherein the side wall of the reservoir and the first and the second lateral segments have oval cross-sections.

12. A device according to Claim 1, wherein the plunger assembly further includes a case of resiliently flexible material enclosing the shape memory element and the first and the second lateral segments in a fluid-tight manner.

13. A device according to Claim 12, wherein the case of the plunger assembly includes a first portion covering the first lateral segment, a second portion covering the second lateral segment, and a collapsible bellows covering the shape memory element and connecting the first and the second portions.

14. A device according to Claim 1, wherein the first and the second lateral segments are substantially prevented from moving away from the outlet of the reservoir.

15. A device according to Claim 14, wherein the first and the second lateral segments include outer circumferential ridges shaped and oriented to engage the side wall of the reservoir and substantially prevent movement of the first and the second lateral segments away from the outlet of the reservoir.

16. A device according to Claim 1, further comprising:

a local processor electrically connected to the shape memory element of the plunger assembly and programmed to provide electrical charges to the shape memory element based upon flow instructions;

a wireless receiver connected to the local processor for receiving flow instructions from a separate, remote control device and delivering the flow instructions to the local processor; and

a housing containing the reservoir, the exit port assembly, the plunger assembly, the local processor and the wireless receiver, and wherein the housing is free of user input components for providing flow instructions to the local processor.

17. A system including a fluid delivery device according to Claim 16, and further comprising a remote control device separate from the fluid delivery device and including:

a remote processor;

user interface components connected to the remote processor for allowing a user to provide flow instructions to the remote processor; and

a transmitter connected to the remote processor for transmitting the flow instructions to the receiver of the fluid delivery device.

18. A device according to Claim 1, wherein the reservoir contains a therapeutic fluid.

19. A device according to Claim 18, wherein the therapeutic fluid is insulin.

20. A device according to Claim 1, wherein the exit port assembly includes a transcutaneous patient access tool.

21. A device according to Claim 20, wherein the transcutaneous patient access tool comprises a needle.

22. A device according to Claim 1, further comprising a local processor connected to ends of the shape memory element through conductive wires and programmed to provide charges to the shape memory element based upon flow instructions.

23. A device according to Claim 22, further comprising a power supply connected to the local processor.

24. A device according to Claim 1, wherein the shape memory element comprises an elongated tube extending parallel with the longitudinal axis of the reservoir between the first and the second lateral elements.

25. A device according to Claim 24, wherein the tubular shape memory element includes elongated cut-outs extending parallel with the longitudinal axis of the reservoir.

26. A device according to claim 24, wherein the tubular shape memory element comprises a collapsible bellows.

27. A device according to claim 1, wherein the plunger assembly further includes a cooler assembly in contact with the shape memory element.

28. A device according to claim 27, wherein the cooler assembly includes a thermoelectric cooler.

29. A device according to claim 27, wherein the cooler assembly includes a heat sink.

30. A device according to claim 1, wherein the reservoir includes a check valve assembly within the outlet.

31. A device for delivering fluid to a patient, comprising:

an exit port assembly;

a dispenser including,

a container having an outlet connected to the exit port assembly, an inlet for connection to a reservoir, and a side wall extending along a longitudinal axis towards the outlet and the inlet, and

a plunger assembly received in the container and including,

a first lateral segment extending laterally with respect to the longitudinal axis of the container and contacting the side wall of the container,

a second lateral segment positioned between the first lateral segment and the outlet of the container, the second lateral segment extending laterally with respect to the longitudinal axis of the container and contacting the side wall of the container, and longitudinally spaced from the first lateral segment, and

a shape memory element having a changeable length decreasing from an uncharged length to a charged length when at least one charge is applied to the shape memory element, the shape memory element connecting the first and the second lateral segments.

32. A device according to claim 31, wherein the shape memory element is made of a nickel and titanium alloy.

33. A device according to claim 31, wherein the shape memory element is elongated and extends between a first end connected to the first lateral segment and a second end connected to the second lateral segment.

34. A device according to claim 33, wherein the shape memory element comprises a wire having a generally circular cross-section.

35. A device according to claim 33, wherein the shape memory element comprises a coiled spring.

36. A device according to claim 33, wherein the shape memory element comprises a collapsible bellows.

37. A device according to claim 31, wherein the plunger assembly further includes a rigid projection positioned between the first and the second lateral segments and extending parallel with the longitudinal axis of the container for limiting the closeness of the first and the second lateral segments.

38. A device according to claim 37, wherein the rigid projection of the plunger assembly has a substantially predetermined length extending parallel with the longitudinal axis of the container.

39. A device according to claim 38, wherein the shape memory element has a substantially predetermined uncharged length.

40. A device according to claim 31, wherein the shape memory element has a substantially predetermined uncharged length and a substantially predetermine charged length.

41. A device according to claim 31, wherein the plunger assembly is prevented from rotating with respect to the side wall of the container.

42. A device according to claim 31, wherein the first lateral segment is fixed in position with respect to the side wall of the container.

43. A device according to claim 31, wherein the plunger assembly further includes a cooler assembly in contact with the shape memory element.

44. A device according to claim 43, wherein the cooler assembly includes a thermoelectric cooler.

45. A device according to claim 43, wherein the cooler assembly includes a heat sink.

46. A device according to claim 31, wherein the container includes a check valve assembly within the outlet.

47. A device according to claim 31, wherein the container includes a check valve assembly within the inlet.

48. A device according to claim 31, wherein:

the side wall of the container includes a first section extending from the outlet and the inlet of the container parallel with the longitudinal axis and a second section extending from the first section parallel with the longitudinal axis, and wherein the first section of the side wall has an internal cross-sectional dimension that is unequal to an internal cross-sectional dimension of the second section of the side wall; and

the first and the second lateral segments of the plunger assembly are received in the second section of the side wall of the container, and the plunger assembly further includes strut extending from the second lateral segment and slidingly received in the first section of the side wall of the container, wherein the strut is sized and shaped to provided a substantially fluid-tight seal between the first section of the side wall and the strut.

49. A device according to claim 31, further comprising a reservoir connected to the inlet of the dispenser.

50. A device according to claim 49, wherein the reservoir contains a therapeutic fluid.

51. A device according to claim 50, wherein the therapeutic fluid is insulin.

52. A device according to claim 31, wherein the exit port assembly includes a transcutaneous patient access tool.

53. A device according to claim 52, wherein the transcutaneous patient access tool comprises a needle.

54. A device according to claim 31, further comprising a local processor connected to ends of the shape memory element through conductive wires and programmed to provide charges to the shape memory element based upon flow instructions.

55. A device according to claim 54, further comprising a power supply connected to the local processor.

56. A device according to claim 31, further comprising:

a local processor electrically connected to the shape memory element of the plunger assembly and programmed to provide electrical charges to the shape memory element based upon flow instructions;

a wireless receiver connected to the local processor for receiving flow instructions from a separate, remote control device and delivering the flow instructions to the local processor; and

a housing containing the dispenser, the exit port assembly, the local processor and the wireless receiver, and wherein the housing is free of user input components for providing flow instructions to the local processor.

57. A system including a fluid delivery device according to claim 56, and further comprising a remote control device separate from the fluid delivery device and including:

a remote processor;

user interface components connected to the remote processor for allowing a user to provide flow instructions to the remote processor; and

a transmitter connected to the remote processor for transmitting the flow instructions to the receiver of the fluid delivery device.

58. A device according to claim 31, wherein the shape memory element comprises two-way shape memory material and the shape memory element biases the first and the second lateral segments together when at least one charge is applied to the shape memory element and biases the first and the second lateral segments apart when at least one charge is removed.

59. A device according to claim 31, wherein the shape memory element comprises one-way shape memory material and biases the first and the second lateral segments together when at least one charge is applied to the shape memory element.

60. A device according to claim 59, wherein the plunger assembly further includes a spring biasing the first and the second lateral segments.

61. A device for delivering fluid to a patient, comprising:

an exit port assembly;

a dispenser including,

a container having an outlet connected to the exit port assembly, an inlet for connection to a reservoir, and a side wall extending along a longitudinal axis towards the outlet and the inlet, and

a plunger assembly received in the container and including,

a first lateral segment extending laterally with respect to the longitudinal axis of the container and contacting the side wall of the container,

a second lateral segment positioned between the first lateral segment and the outlet of the container, the second lateral segment extending laterally with respect to the longitudinal axis of the container and contacting the side wall of the container, and longitudinally spaced from the first lateral segment,

a spring biasing the first and the second lateral segments longitudinally apart, and

an actuator arranged to overcome the spring and bias the first and the second lateral segments longitudinally together upon actuation.

62. A device according to claim 61, wherein the plunger assembly further includes a rigid projection positioned between the first and the second lateral segments and extending parallel with the longitudinal axis of the container for limiting the closeness of the first and the second lateral segments.

63. A device according to claim 62, wherein the rigid projection of the plunger assembly has a substantially predetermined length extending parallel with the longitudinal axis of the container.

64. A device according to claim 61, wherein the plunger assembly is prevented from rotating with respect to the side wall of the container.

65. A device according to claim 61, wherein the first lateral segment is fixed in position with respect to the side wall of the container.

66. A device according to claim 61, wherein the container includes a check valve assembly within the outlet.

67. A device according to claim 61, wherein the container includes a check valve assembly within the inlet.

68. A device according to claim 61, wherein:

the side wall of the container includes a first section extending from the outlet and the inlet of the container parallel with the longitudinal axis and a second section extending from the first section parallel with the longitudinal axis, and wherein the first section of the side wall has an internal cross-sectional dimension that is unequal to an internal cross-sectional dimension of the second section of the side wall; and

the first and the second lateral segments of the plunger assembly are received in the second section of the side wall of the container, and the plunger assembly further includes strut extending from the second lateral segment and slidingly received in the first section of the side wall of the container, wherein the strut is sized and shaped to provided a substantially fluid-tight seal between the first section of the side wall and the strut.

69. A device according to claim 61, further comprising a reservoir connected to the inlet of the dispenser.

70. A device according to claim 69, wherein the reservoir contains a therapeutic fluid.

71. A device according to claim 70, wherein the therapeutic fluid is insulin.

72. A device according to claim 61, wherein the exit port assembly includes a transcutaneous patient access tool.

73. A device according to claim 72, wherein the transcutaneous patient access tool comprises a needle.

74. A device according to claim 61, further comprising a local processor connected to the actuator of the plunger assembly and programmed to actuate the actuator based upon flow instructions.

75. A device according to claim 74, further comprising a power supply connected to the local processor.

76. A device according to claim 61, further comprising:

a local processor electrically connected to the actuator of the plunger assembly and programmed to actuate the actuator based upon flow instructions;

a wireless receiver connected to the local processor for receiving flow instructions from a separate, remote control device and delivering the flow instructions to the local processor; and

a housing containing the dispenser, the exit port assembly, the local processor and the wireless receiver, and wherein the housing is free of user input components for providing flow instructions to the local processor.

77. A system including a fluid delivery device according to claim 76, and further comprising a remote control device separate from the fluid delivery device and including:

a remote processor;

user interface components connected to the remote processor for allowing a user to provide flow instructions to the remote processor; and

a transmitter connected to the remote processor for transmitting the flow instructions to the receiver of the fluid delivery device.

78. A device according to claim 61, wherein the actuator of the plunger assembly comprises a piezoelectric element.

79. A device according to claim 61, wherein the actuator of the plunger assembly comprises a solenoid assembly.

80. A device according to claim 1, wherein:

the side wall of the reservoir includes a first section extending from the outlet of the reservoir parallel with the longitudinal axis and a second section extending from the first section parallel with the longitudinal axis, and wherein the first section of the side wall has an internal cross-sectional dimension that is unequal to an internal cross-sectional dimension of the second section of the side wall; and

the first and the second lateral segments of the plunger assembly are received in the second section of the side wall of the reservoir, and the plunger assembly further includes strut extending from the second lateral segment and slidingly received in the first section of the

side wall of the reservoir, wherein the strut is sized and shaped to provided a substantially fluid-tight seal between the first section of the side wall and the strut.

81. A device according to claim 80, wherein the internal cross-sectional dimension of the first section of the side wall of the reservoir is smaller than the internal cross-sectional dimension of the second section of the side wall.

82. A device according to claim 48, wherein the internal cross-sectional dimension of the first section of the side wall of the container is smaller than the internal cross-sectional dimension of the second section of the side wall.

83. A device according to claim 68, wherein the internal cross-sectional dimension of the first section of the side wall of the container is smaller than the internal cross-sectional dimension of the second section of the side wall.